



Attorney's Docket No.: 11926-015001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Vincent P. Stanton, Jr. Art Unit : 1655
Serial No. : 09/658,659 Examiner : Chakrabarti, A.
Filed : September 8, 2000
Title : GENE SEQUENCE VARIANCE IN GENES RELATED TO FOLATE
METABOLISM HAVING UTILITY IN DETERMINING THE TREATMENT OF
DISEASE

Commissioner for Patents
Washington, D.C. 20231

DECLARATION REGARDING INCORPORATION BY REFERENCE

1. Applicant hereby declares that the Sequence Listing appended hereto consists of the same sequence information incorporated by reference in the above-referenced application by reference to the GenBank® Accession Number U09806.

2. The sequence of SEQ ID NO:1 in the appended Sequence Listing is the same as that associated with GeneBank® Accession number U09806 on July 20, 1998, the filing date of U.S. Serial No. 60/093,484, from which the present application claims priority. This particular version of GeneBank® Accession Number U09806 is assigned the version identifier GI:945022. Exhibit A attached hereto is a printout from the GeneBank® Database of GenBank® Accession Number U09806 [GI: 945022]. This printout shows that GenBank® Accession Number U09806 [GI: 945022] replaced an earlier version of the sequence U09806 [GI:499223] on August 17, 1995. Exhibit B is a printout from the GeneBank® Database of Accession No. U09806 [GI:6174884] showing that it replaced GeneBank® Database of Accession No. U09806 [GI:945022] on November 2, 1999.

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

November 13, 2002
Date of Deposit

Lenora H. Francis
Signature

Lenora H. Francis

Typed or Printed Name of Person Signing Certificate

Applicant : Vincent P. Stanton, Jr.
Serial No. : 09/658,659
Filed : September 8, 2000
Page : 2

Attorney's Docket No.: 11926-015001

3. In my Declaration regarding Incorporation By Reference filed on October 22, 2001 I mistakenly stated that the sequences in the Sequence Listing appended thereto were those incorporated by reference to GeneBank® Accession numbers in the above-referenced application. However, for GeneBank® Accession number U09806, the Sequence Listing appended to my October 22, 201 Declaration Regarding Incorporation by Reference had the incorrect version of GeneBank® Accession number U09806, namely, GeneBank® Accession number U09806 [GI:6174884] rather than GeneBank® Accession number U09806 [GI:945022]. This error was made without deceptive intent.

4. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

November 13, 2002
Date

Vincent P. Stanton, Jr.
Vincent P. Stanton, Jr.

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

20539163.doc

EXHIBIT A of DECLARATION for 09/658,659



PubMed

Nucleotide

Protein

Genome

Structure

PopSet

Taxonomy

OMIM

Bio

Search for

Go

Clear

Limits

Preview/Index

History

Clipboard

Details

Display

Save

Text

Add to Clipboard

Get Subsequence

1: U09806[gi:945022]

LOCUS HSU09806 2187 bp mRNA linear PRI 29-OCT-1999
 DEFINITION Homo sapiens methylenetetrahydrofolate reductase (MTHFR) mRNA, complete cds.
 ACCESSION U09806
 VERSION U09806.1 GI:945022
 KEYWORDS
 SOURCE Homo sapiens (human)
 ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
 REFERENCE 1 (bases 1 to 2187)
 AUTHORS Goyette, P., Sumner, J.S., Milos, R., Duncan, A.M., Rosenblatt, D.S., Matthews, R.G. and Rozen, R.
 TITLE Human methylenetetrahydrofolate reductase: isolation of cDNA, mapping and mutation identification [published erratum appears in Nat Genet 1994 Aug;7(4):551]
 JOURNAL Nature Genet. 7 (2), 195-200 (1994)
 MEDLINE 95004587
 REFERENCE 2 (bases 1 to 2187)
 AUTHORS Frosst, P., Blom, H.J., Milos, R., Goyette, P., Sheppard, C., Matthews, R., Boers, G., den Heijer, M., Kluijtmans, L., van den Heuvel, L. and Rozen, R.
 TITLE A candidate genetic risk factor for vascular disease: a common mutation in methylenetetrahydrofolate reductase
 JOURNAL Nat. Genet. 10, 111-113 (1995)
 REFERENCE 3 (bases 1 to 2187)
 AUTHORS Rozen, R.
 TITLE Direct Submission
 JOURNAL Submitted (17-MAY-1994) Rima Rozen, Pediatrics, Human Genetics and Biology, McGill University - Montreal Children's Hospital, 2300 Tupper St., Montreal, Quebec H3H 1P3, Canada
 REFERENCE 4 (bases 1 to 2187)
 AUTHORS Leclerc, D., Sibani, S. and Rozen, R.
 TITLE Direct Submission
 JOURNAL Submitted (29-OCT-1999) Pediatrics, Human Genetics and Biology, McGill University - Montreal Children's Hospital, 2300 Tupper St., Montreal, Quebec H3H 1P3, Canada
 REMARK Amino acid sequence update by submitter
 COMMENT [WARNING] On Nov 2, 1999 this sequence was replaced by a newer version gi:6174884.
 On Aug 17, 1995 this sequence version replaced gi:499223.
 FEATURES
 source Location/Qualifiers
 1..2187
 /organism="Homo sapiens"
 /db_xref="taxon:9606"
 /chromosome="1"
 /map="1p36.3"

EXHIBIT A

gene /clone="phcMR1"
/tissue_type="liver"
/dev_stage="adult"
1..2187
/gene="MTHFR"
CDS 4..1974
/gene="MTHFR"
/note="Method: conceptual translation with partial peptide sequencing"
/codon_start=1
/product="methylenetetrahydrofolate reductase"
/protein_id="AAA74440.2"
/db_xref="GI:6139053"
/translation="MVNEARGNSSLNPCLEGSASSGSESSKSSRCSTPGLDPERHER
LREKMRRRLES GDKWFSLEFFPPRTAEGAVNLISRFDRMAAGGLYIDVTWHPAGDPG
SDKETSSMMIASTAVNYCGLETILHMTCCRQRLEEITGHLHAKQLGLKNIMALRGDP
IGDQWEEEGGFNYAVDLVKHIRSEFGDYFDICVAGYPKGHPAGSFEADLKHLEKV
SAGADFIITQLFFEADTFFRFVKA CTDMGITCPIVPGIFPIQGYHSLRQLVKLSKLEV
PQEI KDVIEPIKDNDAAIRNYGIELAVSLCQELLASGLVPLGHFYTLNREMATTEVLK
RLGMWTE DRRPLPWALSAHPKRREEDVRPIFWASRPKSYIYRTQEWDEFNNGRWGNS
SSPAFGELKDYYLFYLYKSKSPKEELLKMWGEELTSEASVFEVFLYLSGEPNRRGHKV
TCLPWNDEPLAAETSLLEKELLRVNRQGILTINSQPNINGKFPSSDPIVGWGPSSGGYVF
QKAYLEFFTSRETA EALLQVLKKYELRVNYHLVNVKGENITNAPELQPNVATWGI FPG
REIIQPTVVDPVSFMFWKDEAFALWIERWGKLYEEESPRTIIQYIHDNYFLVNLVDN
DFPLDNCLWQVVEDTLELLNRPTQNARETEAP"
variation 1289
/gene="MTHFR"
/note="E429A; reported by Weisberg et al (1998) Mol.
Genet. Metabol. 64, 169-172"
/replace="a"
polyA site 2187
/gene="MTHFR"
/note="18 A nucleotides"
/evidence=experimental
BASE COUNT 479 a 655 c 616 g 437 t
ORIGIN
1 gccatggtga acgaagccag aggaacacagc agcctcaacc cctgcttga gggcagtgcc
61 agcagtgga gtagagctc caaagatagt tcgagatgtt ccaccccggg cctggaccct
121 gagcgcatg agagactccg ggagaagatg aggcggcgat tggaatctgg tgacaagtgg
181 ttctccctgg aattcttccc tcctcgaact gctgaggag ctgtcaatct catctcaagg
241 tttgaccgga tggcagcagg tggcccccctc tacatagacg tgacctggca ccagcaggt
301 gacctgggt cagacaagga gacctcctcc atgatgatcg ccagcaccgc cgtgaactac
361 tgtggcctgg agaccatcct gcacatgacc tgctgccgtc agcgcctgga ggagatcacg
421 ggccatctgc acaaagctaa gcagctgggc ctgaagaaca tcatggcgct gcggggagac
481 ccaataggtg accagtggga agaggaggag ggaggcttca actacgcagt ggacctggtg
541 aagcacatcc gaagtgaagt tggtgactac tttgacatct gtgtggcagg ttaccccaaa
601 ggccaccccg aagcaggag ctttgaggct gacctgaagc acttgaagga gaaggtgtct
661 gcgggagccg atttcatcat caccgagctt ttctttgagg ctgacacatt cttccgctt
721 gtgaaggcat gcaccgacat gggcatcact tgcccatcg tccccggat ctttcccatc
781 cagggtacc actcccttg gcagcttggt aagctgtcca agctggaggt gccacaggag
841 atcaaggacg tgattgagcc aatcaaagac aacgatgctg ccatccgcaa ctatggcatc
901 gagctggccg tgagcctgtg ccaggagctt ctggccagtg gcttggtgcc aggcctccac
961 ttctacaccc tcaaccgga gatggctacc acagagggtc tgaagcgct ggggatgtgg
1021 actgaggacc ccaggcgctc cctaccctgg gctctcagtg cccaccccaa gcgccgagag
1081 gaagatgtac gtcccatctt ctgggcctcc agaccaaaga gttacatcta ccgtaccag
1141 gagtgggacg agttccctaa cggccgctgg ggcaattcct cttccctgc ctttggggag
1201 ctgaaggact actacctct ctacctgaag agcaagtccc ccaaggagga cgtgctgaag
1261 atgtgggggg aggagctgac cagtgaagca agtgtctttg aagtctttgt tctttacctc
1321 tcgggagAAC caaacggaa tggtcacaaa gtgacttgcc tgcctggaa cgatgagccc
1381 ctggcggctg agaccagcct gctgaaggag gagctgctgc ggggaaccg ccagggcac

```
1441 ctcaccatca actcacagcc caacatcaac gggaagccgt cctccgaccc catcgtgggc
1501 tggggcccca gcgggggcta tgtcttccag aaggcctact tagagttttt cacttcccgc
1561 gagacagcgg aagcacttct gcaagtgtcg aagaagtacg agctccgggt taattaccac
1621 cttgtcaatg tgaagggtga aaacatcacc aatgccctg aactgcagcc gaatgctgtc
1681 acttggggca tcttccctgg gcgagagatc atccagccca ccgtagtgga tcccgtcagc
1741 ttcattgttct ggaaggacga ggcctttgcc ctgtggattg agcgggtggg aaagctgtat
1801 gaggaggagt ccccgctccg caccatcatc cagtacatcc acgacaacta cttcctggtc
1861 aacctggtgg acaatgactt cccactggac aactgcctct ggcaggtggt ggaagacaca
1921 ttggagcttc tcaacaggcc caccagaat gcgagagaaa cggaggctcc atgacctgc
1981 gtcttgacgc cctgcgttgg agccactcct gtcccgctt cctcctccac agtgctgctt
2041 ctcttgggaa ctccactctc cttcgtgtct cttccacccc ggcctccact ccccccactg
2101 acaatggcag ctgactgga gtgaggcttc caggctcttc ctggacctga gtcggcccca
2161 catgggaacc tagtactctc tgctcta
```

//

Revised: July 5, 2002.

Disclaimer | Write to the Help Desk
NCBI | NLM | NIH

Oct 31 2002 16:00:17



PubMed

Nucleotide

Protein

Genome

Structure

PopSet

Taxonomy

OMIM

Boo

Search for

Go

Clear

Limits

Preview/Index

History

Clipboard

Details

Display

Save

Text

Add to Clipboard

Get Subsequence

1: U09806. Synthetic constru...[gi:6174884]

Links

LOCUS HSU09806 2196 bp mRNA linear SYN 06-DEC-1999

DEFINITION Synthetic construct methylenetetrahydrofolate reductase (MTHFR) mRNA, complete cds.

ACCESSION U09806

VERSION U09806.2 GI:6174884

KEYWORDS .

SOURCE synthetic construct

ORGANISM synthetic construct
artificial sequences.

REFERENCE 1 (bases 1 to 2196)

AUTHORS Goyette,P., Sumner,J.S., Milos,R., Duncan,A.M., Rosenblatt,D.S., Matthews,R.G. and Rozen,R.

TITLE Human methylenetetrahydrofolate reductase: isolation of cDNA, mapping and mutation identification

JOURNAL Nat. Genet. 7 (2), 195-200 (1994)

MEDLINE 95004587

PUBMED 7920641

REFERENCE 2 (bases 1 to 2196)

AUTHORS Frosst,P., Blom,H.J., Milos,R., Goyette,P., Sheppard,C., Matthews,R., Boers,G., den Heijer,M., Kluijtmans,L., van den Heuvel,L. and Rozen,R.

TITLE A candidate genetic risk factor for vascular disease: a common mutation in methylenetetrahydrofolate reductase

JOURNAL Nat. Genet. 10 (1), 111-113 (1995)

MEDLINE 95375773

PUBMED 7647779

REFERENCE 3 (bases 1 to 2196)

AUTHORS Rozen,R.

TITLE Direct Submission

JOURNAL Submitted (17-MAY-1994) Rima Rozen, Pediatrics, Human Genetics and Biology, McGill University - Montreal Children's Hospital, 2300 Tupper St., Montreal, Quebec H3H 1P3, Canada

REFERENCE 4 (bases 1 to 2196)

AUTHORS Leclerc,D., Sibani,S. and Rozen,R.

TITLE Direct Submission

JOURNAL Submitted (29-OCT-1999) Pediatrics, Human Genetics and Biology, McGill University - Montreal Children's Hospital, 2300 Tupper St., Montreal, Quebec H3H 1P3, Canada

REMARK Amino acid sequence update by submitter

COMMENT On Nov 2, 1999 this sequence version replaced gi:945022.

FEATURES Location/Qualifiers

source 1..2196
/organism="synthetic construct"
/db_xref="taxon:32630"

gene 1..2196
/gene="MTHFR"

misc_feature 1..8

EXHIBIT B

CDS
/gene="MTHFR"
/note="EcoRI linker"
13..1983
/gene="MTHFR"
/note="Method: conceptual translation with partial peptide sequencing"
/codon_start=1
/transl_table=11
/product="methylenetetrahydrofolate reductase"
/protein_id="AAA74440.2"
/db_xref="GI:6139053"
/translation="MVNEARGNSSLNPCLEGSASSGSESSKDSSRCSTPGLDPERHER
LREKMRRRLES GDKWFSLEFFPPRTAEGAVNLISRFDRMAAGGPLYIDVTWHPAGDPG
SDKETSSMMIASTAVNYCGLETILHMTCCRQRLEEITGHLHKAKQLGLKNIMALRGDP
IGDQWEEEEGGFNAYDLVKHIRSEFGDYFDICVAGYPKGHPEAGSFEADLHLKEKV
SAGADFIITQLFFEADTFFRFVKACTDMGITCPIVPGIFPIQGYHSLRQLVKLSKLEV
PQEI KDVIEPIKDNDAAIRNYGIELAVSLCQELLASGLVPGLHFYTLNREMATTEVLK
RLGMWTEDPRRPLPWALSAHPKRREEDVRPIFWASRPKSYIYRTQEWDEFNNGRWGNS
SSPAFGELKDYYLFYLSKSPKEELLKMWGEELTSEASVFEVFLYLSGEPNRRGHKV
TCLPWNDEPLAAETSLLEKELLRVNRQGILTINSQPNINGKPSSDPVWGWPSSGGYVF
QKAYLEFFTSRETAELQLVKYELRVNYHLVNVKGENTINAPELQPNVAVTWGIFPG
REIIQPTVVDVPSFMFWKDEAFALWIERWGKLYEEESPRTIIQYIHDNYFLVNLVDN
DFPLDNCLWQVVEDTLELLNRPTQNARETEAP"

variation
1298
/gene="MTHFR"
/note="E429A; reported by Weisberg et al (1998) Mol.
Genet. Metabol. 64, 169-172"
/replace="a"

polyA site
2196
/gene="MTHFR"
/note="18 A nucleotides"
/evidence=experimental

BASE COUNT 482 a 657 c 618 g 439 t
ORIGIN
1 aattccggag ccatggtgaa cgaagccaga ggaaacagca gcctcaaccc ctgcttggag
61 ggcagtgcca gcagtgccag tgagagctcc aaagatagtt cgagatgttc caccgccggc
121 ctggaccctg agcggcatga gagactccgg gagaagatga ggcggcgatt ggaatctggt
181 gacaagtggg tctccctgga attcttccct cctcgaactg ctgagggagc tgtcaatctc
241 atctcaaggt ttgaccggat ggcagcaggt ggccccctct acatagacgt gacctggcac
301 ccagcaggtg accctggctc agacaaggag acctcctcca tgatgatcgc cagcaccgcc
361 gtgaactact gtggcctgga gaccatcctg cacatgacct gctgccgtca ggcgctggag
421 gagatcacgg gccatctgca caaagctaag cagctgggcc tgaagaacat catggcgctg
481 cggggagacc caataggtga ccagtgaggaa gaggaggagg gaggcttcaa ctacgcagtg
541 gacctggtga agcacatcog aagtgaagttt ggtgactact ttgacatctg tgtggcaggt
601 taccocaaag gccacccoga agcagggagc tttgaggctg acctgaagca cttgaaggag
661 aaggtgtctg cgggagccga tttcatcatc acgcagcttt tctttgaggc tgacacattc
721 ttccgctttg tgaaggcatg caccgacatg ggcatactt gcccatcgt ccccgggatc
781 tttcccatcc agggctacca ctcccttcgg cagcttgtga agctgtccaa gctggagggtg
841 ccacaggaga tcaaggacgt gattgagcca atcaaagaca acgatgctgc catccgcaac
901 tatggcatcg agctggccgt gagcctgtgc caggagcttc tggccagtggt cttggtgcca
961 ggctccact tctacacct caaccgcgag atggctacca cagaggtgct gaagcgctg
1021 gggatgtgga ctgaggaccc caggcgctcc ctacctggg ctctcagtg ccaccccaag
1081 gcgccgagagg aagatgtaog tcccatcttc tgggctcca gaccaaaag ttacatctac
1141 cgtacccagg agtgggacga gttccctaac ggccgctggg gcaattcctc tccccctgcc
1201 tttggggagc tgaaggacta ctacctcttc tacctgaaga gcaagtcccc caaggaggag
1261 ctgctgaaga tgtgggggga ggagctgacc agtgaaagca gtgtctttga agtctttgtt
1321 ctttacctct cgggagaacc aaaccggaat ggtcacaaag tgacttgctt gccctggaac
1381 gatgagcccc tggcggtgga gaccagcctg ctgaaggagg agctgctgcg ggtgaaccgc
1441 cagggcatcc tcaccatcaa ctacagccc aacatcaacg ggaagccgtc ctccgacccc
1501 atcggtgggt ggggccccag cgggggctat gtcttccaga aggcctactt agagtttttc

```
1561 acttcccgcg agacagcgga agcacttctg caagtgctga agaagtacga gctccggggtt
1621 aattaccacc ttgtcaatgt gaagggtgaa aacatcacca atgcccctga actgcagccg
1681 aatgctgtca cttggggcat cttccctggg cgagagatca tccagccac cgtagtggat
1741 cccgtcagct tcatgttctg gaaggacgag gcctttgccc tgtggattga gcggtgggga
1801 aagctgtatg aggaggagtc cccgtcccgc accatcatcc agtacatcca cgacaactac
1861 ttcttggtca acctggtgga caatgacttc ccactggaca actgcctctg gcaggtggtg
1921 gaagacacat tggagcttct caacaggccc acccagaatg cgagagaaac ggaggctcca
1981 tgaccctgcg tctgacgcc ctgcgttgga gccactcctg tccgccttc ctctccaca
2041 gtgctgcttc tcttggaac tccactctcc ttctgtcttc tcccaccccg gctccactc
2101 cccacctga caatggcagc tagactggag tgaggcttc aggctcttc tggacctgag
2161 tcggccccac atgggaacct agtactctct gctcta
```

//

Revised: July 5, 2002.

[Disclaimer](#) | [Write to the Help Desk](#)
[NCBI](#) | [NLM](#) | [NIH](#)

Oct 31 2002 16:00:17